PETRI

REPAIR MANUAL

RACER

PETRI CAMERA COMPANY, INC.

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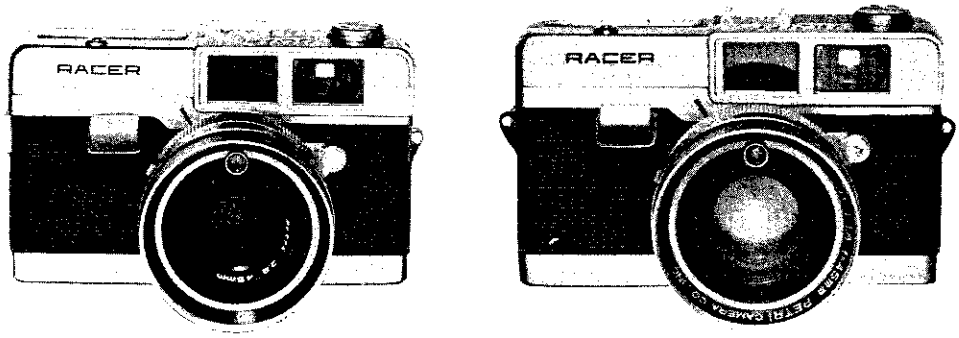
PARTS LIST

RACER



Inform us of the complete CAMERA MODEL, FIGURE NUMBER, PART NUMBER, DESCRIPTION and QUANTITY of each item as illustrated in this manual.
Individual components of some assemblies are not available unless shown separately in this manual. If the part you require is not listed, please ask us about its availability.
Since PETRI products are constantly being improved, the design of some parts shown in this manual may differ from those used on earlier models.

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① PARTS LIST RACER

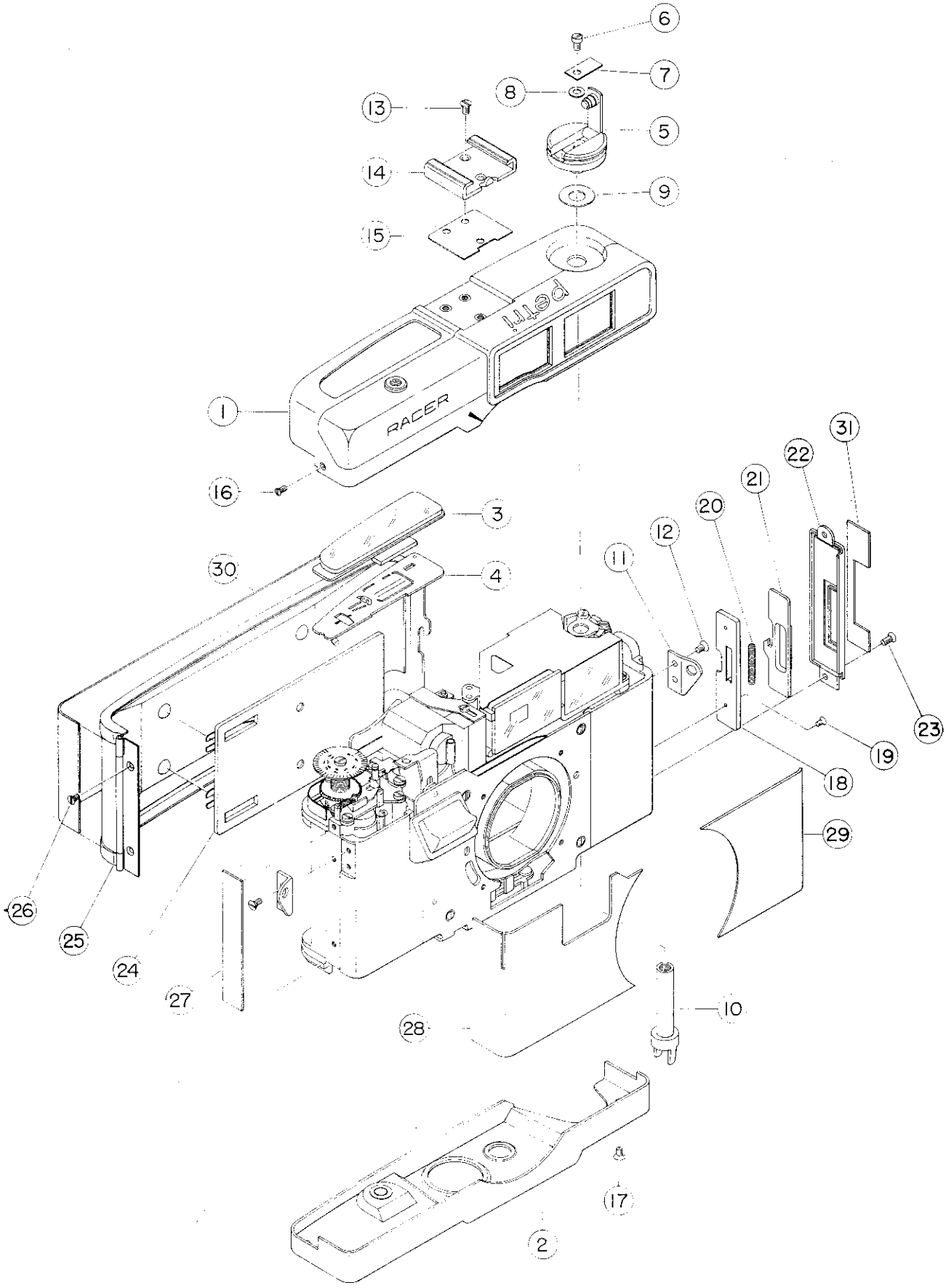

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FIG.	PART NO.	DESCRIPTION	UNIT
1	PCP-1	Top cover (カバー一式)	1
2	PCP-4	Bottom cover assembly (底板一式)	1
3	PCP-23	Needle window (表示ネーム窓)	1
4	PCP-22	Needle window plate (表示ネーム)	1
5	PCB-33	Rewind knob assembly (リターンレバー一式)	1
6	PDB-122	Friction spring screw (リターンレバーバネ取付)	1
7	SPP-140	Friction spring (リターンレバーバネ)	1
8	SPP-141	Friction spring spacer (リターンレバーバネ座金)	1
9	PCP-43	Rewind shaft spacer (リターン芯棒座金)	1
10	PCB-31	Rewind shaft (リターン芯棒)	1
11	PRP-72	Neck strap holder (吊　環)	2
12	PU-1	Neck strap holder screw (吊環取付)	4
13	RB-19	Accessory shoe screw (差込座取付)	3
14	L 2 P-25	Accessory shoe (差込座)	1
15	L 3 P-51	Light baffle paper (差込座遮光紙)	1
16	SPB-135	Top cover screw (カバー取付)	2
17	PM-19	Bottom cover screw (底板取付)	2
18	PCP-49	Latch guide plate (引出案内板)	1
19	CB-68	Latch guide plate screw (引出案内板取付)	2
20	PW-2	Latch spring (蓋止スプリング)	1
21	PCP-50	Back cover latch (蓋止引出)	1
22	PCP-51	Latch cover (蓋止カバー)	1
23	PU-1	Latch cover screw (蓋止カバー取付)	2
24	PCP-47	Pressure plate assembly (圧板一式)	1
25	PCP-44	Back cover assembly (裏蓋一式)	1
26	PU-1	Hinge screw (裏蓋取付)	2
27	PCP-33	Side Light baffle (側面遮光布)	1
28	PCK-1	Front leatherette 'A' (前　皮　A)	1
29	PCK-2	Front leatherette 'B' (前　皮　B)	1
30	PCK-3	Back leatherette (後　皮)	1
31	PCK-4	Latch cover leatherette (蓋　止　皮)	1

PARTS LIST RACER

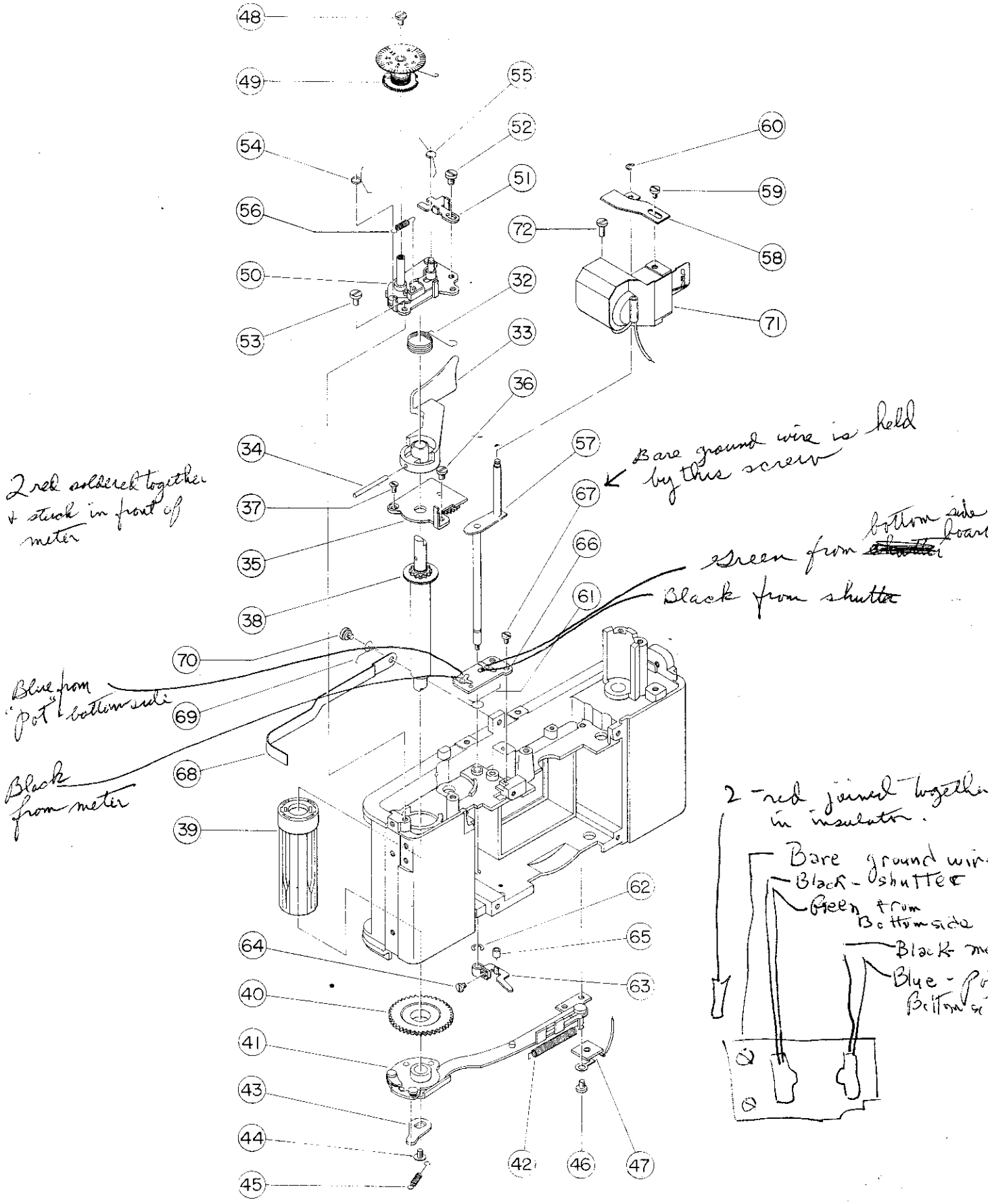

FIG.	PART NO.	DESCRIPTION	UNIT
32	PCW-1	Lever return spring (巻取レバースプリング)	1
33	PCDC-3	Wind lever (巻取レバー)	1
34	PCB-17	Wind drive pin (巻取レバーノック)	1
35	PCP-24	Wind lever base assembly (巻取レバー地板一式)	1
36	PS-17	Wind lever base screw 'A' (巻取レバー地板取付A)	1
37	PCB-18	Wind lever base screw 'B' (巻取レバー地板取付B)	1
38	PCB-1	Drive shaft assembly (巻取芯棒一式)	1
39	SPVP-70	Film spool assembly (リール筒一式) (PC用)	1
40	PCP-11	Spool clutch assembly (捲上ギヤ)	1
41	PCP-7	Shutter set bar assembly (シャッターチャージ桿一式)	1
42	PCW-5	Shutter set bar spring (チャージ桿スプリング)	1
43	PCP-5	Wind lever 'B' (巻取レバー B)	1
44	PCB-4	Wind lever 'B' screw (巻取レバーB取付)	1
45	BCW-6	Wind stopper assembly (首振爪スプリング)	1
46	PIS B-1	Stopper spring screw (チャージ桿台取付)	2
47	PCM-2	Resistor plate assembly (補正抵抗一式)	1
48	PHB-32	Counter dial screw (カウンターダイヤル取付)	1
49	PCP-40	Counter dial assembly (カウンターダイヤル一式)	1
50	PCP-36	Counter base assembly (指数台一式)	1
51	PCP-39	Counter pawl (止め爪レバー)	1
52	PRB-20	Counter pawl screw (止め爪レバー取付)	1
53	PIS B-1	Counter base screw (指数台取付)	2
54	PCW-11	Counter pawl spring (止め爪スプリング)	1
55	PCW-9	Counter pawl lever spring (止め爪レバースプリング)	1
56	PCW-10	Counter ratchet spring (送り爪スプリング)	1
57	PCB-19	Indicator lever shaft assembly (表示レバー軸一式)	1
58	PCP-21	Switch indicator (スイッチ示標)	1
59	PCB-21	Switch indicator screw (スイッチ示標取付)	1
60	E-1.2	1.2 E-Ring (スイッチ示標用スナップリング)	1
61	PCW-7	Switch indicator spring (スイッチ表示レバースプリング)	1
62	E 1.5	1.5 E-Ring (表示レバー軸用スナップリング)	1
63	PCP-18	Switch lever (電池スイッチレバー)	1
64	SPB-95	Switch lever screw (電池スイッチレバー取付)	1
65	PCP-19	Tube insulator (絶縁用ビュールチューブ)	1
66	PCP-29	Switch plate (ラグ板一式)	1
67	PIS B-1	Switch plate screw (ラグ板取付)	2
68	PCP-25	Slot cover (巻取レバーカバー)	1
69	PRW-3	Slot cover spring (レバーカバースプリング)	1
70	PRB-11	Slot cover screw (レバーカバー取付)	1
71	PCM-1	Light meter assembly (メーター 一式)	1
72	PIS B-2	Light meter screw (メーター取付)	2

3 PARTS LIST RACER

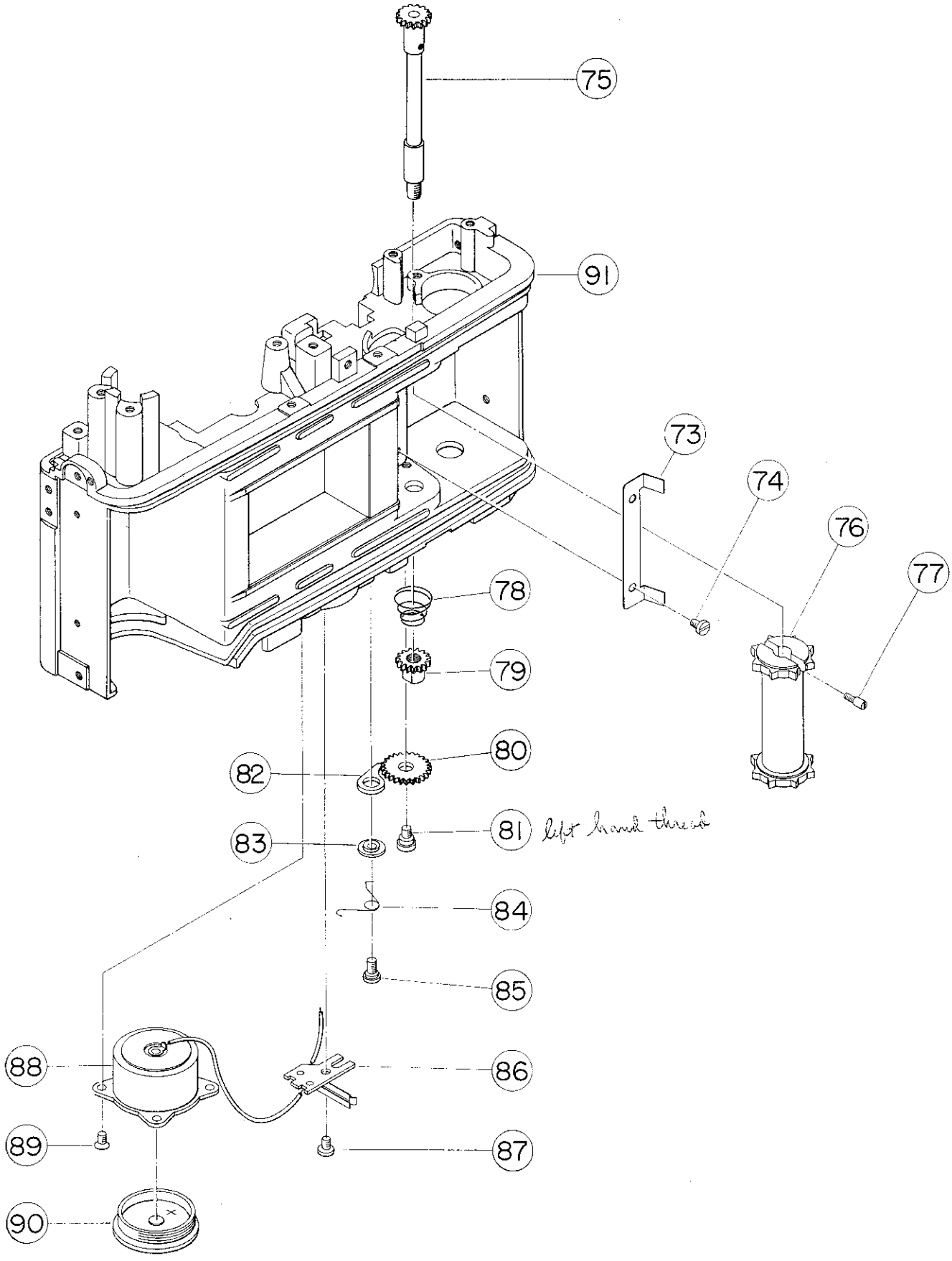

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FIG.	PART NO.	DESCRIPTION	UNIT
73	PCP-60	Film pressure spring (フイルム押えバネ)	1
74	PDB-123	Film pressure spring screw (押えバネ取付)	2
75	PCB-14	Drive shaft assembly (スプロケット芯棒一式)	1
76	EB-61	Sprockets (スプロケット)	1
77	EB-5	Drive pin (スプロケットノック)	1
78	PCW-3	Tension spring (スプロケットバネ)	1
79	PCB-13	Sprocket gear 'A' (スプロケットギヤA)	1
80	PCP-13	Intermediate gear (捲取中間ギヤ)	1
81	PCB-12	Intermediate gear screw (捲取中間ギヤ取付) L.H. Thread	1
82	PCP-12	Wind gear pawl (逆転止爪)	1
83	EB-18	Eccentric washer (逆転エキセン)	1
84	PCW-4	Pawl spring (逆転止スプリング)	1
85	EB-17	Pawl screw (逆転止取付)	1
86	PCP-15	Switch base assembly (スイッチベース一式)	1
87	PISB-1	Switch base screw (スイッチベース取付)	1
88	PCB-34	Battery compartment (電池ボックス)	1
89	PU-1	Battery compartment screw (電池ボックス取付)	3
90	PRB-42	Battery compartment cover (電池キャップ)	1
91	PCDC-1	Body (ボデー)	1

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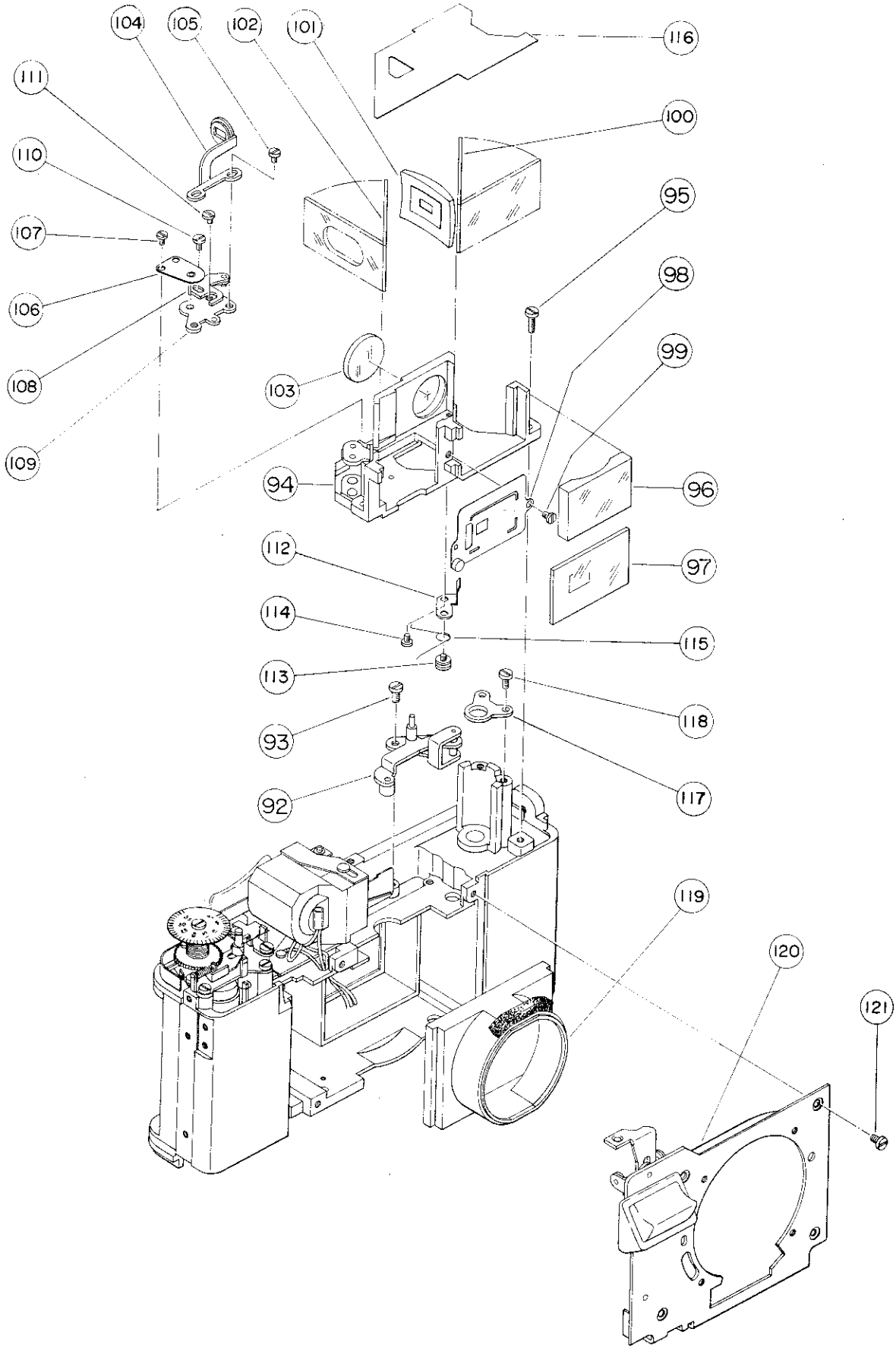

FIG.	PART NO.	DESCRIPTION	UNIT
92	PCP-31	Cam follower assembly (連動桿一式)	1
93	PIS B-1	Cam follower support screw (連動桿台取付)	2
94	PCDC-2	Finder base assembly (地板一式)	1
95	SPB-126	Finder base screw (地板取付)	3
96	PCL-1	Front field lens (対物レンズ)	1
97	PRL-1	Green ground glass (散光ガラス)	1
98	PCP-61	Bright frame mask (チャート枠)	1
99	LB-36	Frame screw (チャート枠取付)	1
100	PCL-6	Half mirror (半透明鏡)	1
101	PCL-4	Intermediate lens assembly (中間レンズ一式)	1
102	PCL-5	Reflex mirror (チャート表面鏡)	1
103	PCL-2	Eye-piece lens (接眼レンズ)	1
104	PRP-42	Negative lens assembly (移動レンズ一式)	1
105	RB-8	Negative lens screw (移動レンズ枠取付)	2
106	PRP-44	Negative lens support (軸芯バネ)	1
107	PDB-123	Negative lens support screw (軸芯バネ取付)	2
108	PCP-35	Negative lens bracket (調節板)	1
109	PCP-34	Negative lens base (移動レンズ枠台)	1
110	RB-8	Bracket screw (調節板取付)	1
111	RB-9	Bracket adjusting screw (調節エキセン)	1
112	PRP-45	Mirror support (半透明鏡押え)	1
113	L 2 B-9	Mirror support screw'A' (半透明鏡取付A)	1
114	PDB-123	Mirror support screw 'B' (半透明鏡取付B)	1
115	PRW-15	Cam follower spring (連動桿スプリング)	1
116	PCP-57	Light baffle (距離計蓋)	1
117	PCP-42	Rewind shaft holder (巻戻芯棒軸板)	1
118	PIS B-1	Rewind shaft holder screw (巻戻芯棒軸板取付)	2
119	PRP-68	Ring light baffle (遮光板)	1
120	PCP-52	Mount plate assembly (シャッター台一式)	1
121	PS-17	Mount plate screw (シャッター台取付)	4

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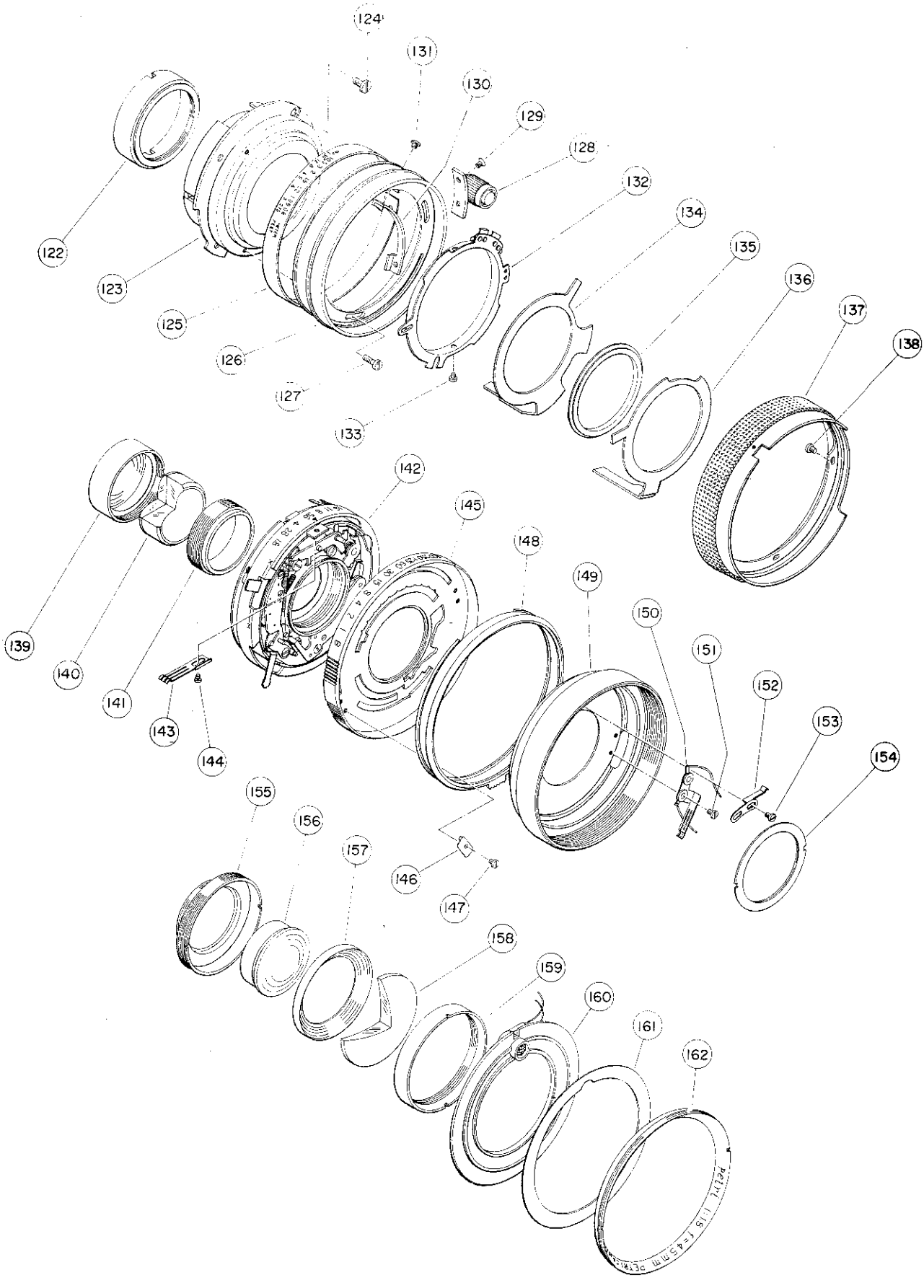

FIG.	PART NO.	DESCRIPTION	UNIT
122	GL-64	Jam nut (シャッター取付リング)	1
123	PCB-35	Helicoid assembly (ヘリコイド一式)	1
124	PS-19	Mount ring screw (ヘリコイド外筒取付)	4
125	PCP-56	Focusing scale (距離目盛)	1
126	PCP-55	Helical ring assembly (ヘリコイドスケール台一式)	1
127	PS-11	Cup screw (ヘリコイドスケール台取付)	3
128	NPS-1003	Focusing knob assembly (焦点調節つまみ一式)	1
129	PS-18	Focusing knob screw (焦点調節つまみ取付)	2
130	PRP-77	Helical gear stopper (ヘリコイドストッパー)	1
131	M206	Helical stopper screw (ヘリコイドストッパー取付)	2
132	PR-79	Connector ring (接片台)	1
133	SPB-102	Connector ring screw (接片台取付)	2
134	PCP-14	Shutter set ring (シャッターセットリング)	1
135	L 2 B-20	Spacer ring (座　金)	1
136	L 3 P-17	Shutter release ring (シャッターレバー)	1
137	PRSP-2	Focusing ring (絞り環一式)	1
138	VEB-210	Focusing ring screw (絞り環取付)	3
139	LB-6	Rear lens ring (後枠リング一式)	1
140	NG 4 -65	Rear lens (後　玉)	1
141	LB- 5	Rear lens retainer (後　枠)	1
142		Shutter assembly (シャッター一式)	1
143	VEP-209	Moving brush (移動接片)	1
144	VEB-8	Moving brush screw (移動接片取付)	1
145	VEP-233	Shutter speed cam (カム板)	1
146	VEP-256	Supporter spring (ASAリング押え)	2
147	VEB-210	Supporter spring screw (ASAリング押え取付)	2
148	PCSB-1	ASA resistor assembly (ASAリング一式)	1
149	PCSP-2	Front assembly cup (ネーム板一式)	1
150	VEP-206	Fixing brush 'A' (固定接片A)	1
151	VEB-7	Fixing brush screw (固定接片A取付)	2
152	VEP-8	Click spring (クリック板)	1
153	VEB-210	Click spring screw (クリック板取付)	2
154	M-153	Shutter cam retainer (ネーム板取付)	1
155	L 2 B-51	Front lens cell (中　枠)	1
156	NG 2 - 3	Middle lenses (中　玉)	1
157	L 2 B-56	Middle lens retainer (中枠座)	1
158	NG- 1	Front lens (前　玉)	1
159	L 4 B-15	Front lens retainer (前　枠)	1
160	PCB-37	CdS photo-cell assembly (CdS取付環一式)	1
161	PCP-58	Front ring (前枠ネーム)	1
162	PCB-38	Front ring retainer (前枠ネーム止め)	1

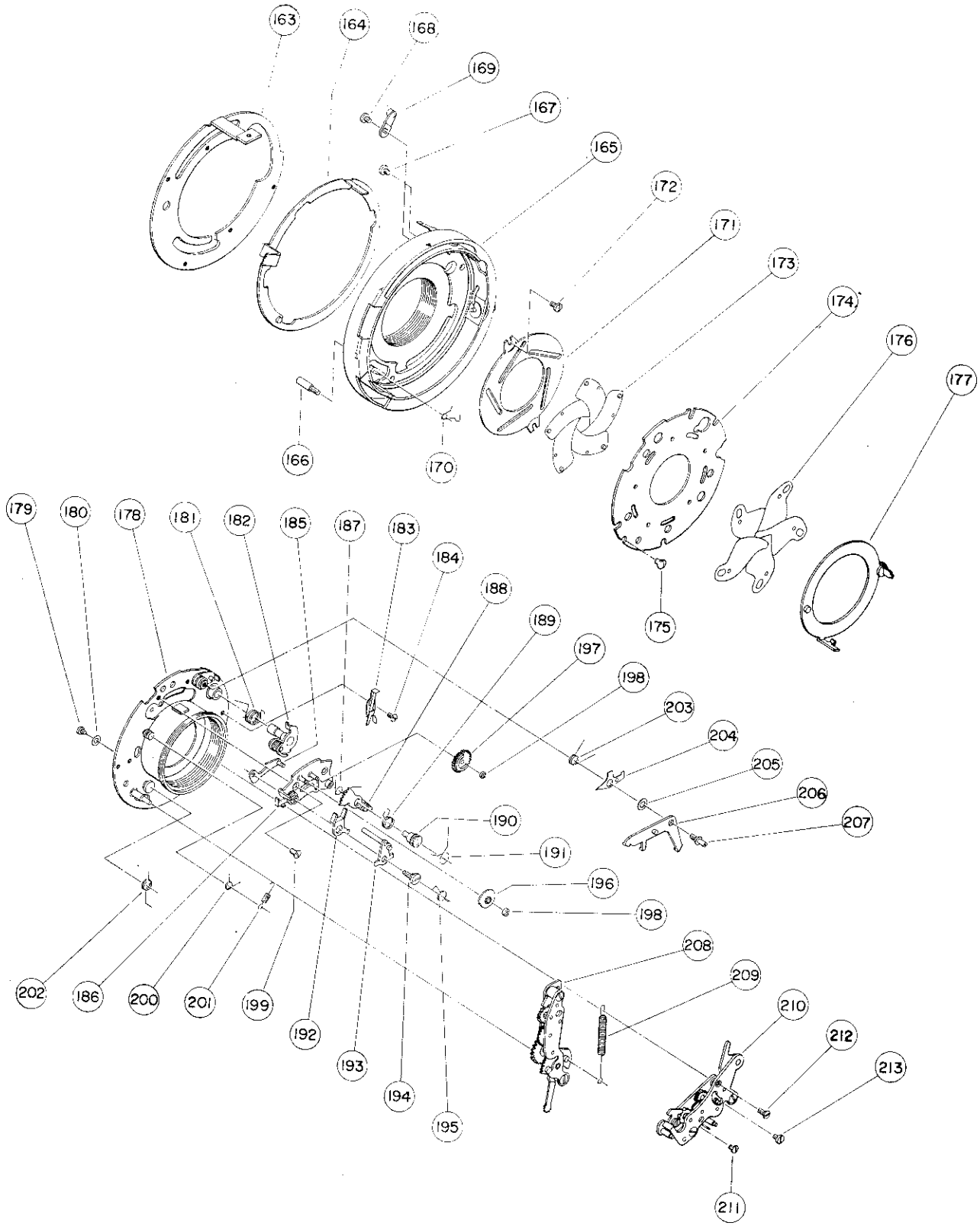
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FIG.	PART NO.	DESCRIPTION	UNIT
163	VEP-231	Diaphragm drive ring (絞りリング)	1
164	VEP-252	MX switch ring (切替レバー)	1
165	VEB-405	Shutter case assembly (シャッターケースー式)	1
166	VEB-208	Shutter case screw (中身取付)	1
167	M-111	Shutter case screw 'A' (中身取付 A)	3
168	M-206	Cocking lever screw (Sレバー C取付)	1
169	MP-36	Cocking lever (Sレバー C)	1
170	PW-73	MX switch ring spring (切替クリックバネ)	1
171	VEP-2	Diaphragm disc (絞り押え B)	1
172	VEB-209	Diaphragm disc screw (絞り押え B 取付)	2
173	VEP-3	Diaphragm blade (絞り羽根)	5
174	VEP-1	Diaphragm covering disc (絞り押え A)	1
175	M-117	Diaphragm covering disc screw (絞り押えA取付)	1
176	MV-37	Shutter blade (五枚羽根 A)	5
177	MV-2	Shutter drive ring (開閉板)	1
178	MVB-204	Mount base assembly (中 板)	1
179	MVB-141	Shutter blade screw (開き押え取付)	5
180	MP-3	Shutter blade screw washer (開閉板押え)	5
181	PW-68	Cocking lever spring (Sレバースプリング)	1
182	MV-3	Cocking & drive lever (Sレバー)	1
183	MP-11	X contact (X 接点)	1
184	M-108	X contact screw (X 接点取付)	1
185	MV-8	Drive ring stopper (開閉板止め)	1
186	MV-1	Gear base (ハンドル台)	1
187	PW-67	Drive ring stopper spring (開閉板止めスプリング)	1
188	MV-10	Sector gear (M扇形ギヤ)	1
189	PW-64	Sector gear spring (M扇形ギヤスプリング)	1
190	VEB-105	Sector gear screw (扇形取付)	1
191	PW-62	Bulb lever spring (バルブスプリング)	1
192	MV-9	Fly wheel stopper (Mギヤ止め)	1
193	MV-6	Release bar (レバーハンドル)	1
194	MVB-106	Release bar screw (レバーハンドル取付)	1
195	PW-63	Release bar spring (レバーハンドルスプリング)	1
196	MV-11	MX fly wheel (MCギヤー式)	1
197	MVB-133	MX delay action gear (MBギヤー式)	1
198	PW-61	Gear spring washer (Mギヤスプリングワッシャ)	2
199	MVB-120	Gear base screw (ハンドル台取付)	2
200	PW-69	Retainer spring (セルフ引掛スプリング)	1
201	PW-70	Fly wheel stopper spring (Mギヤ止スプリング)	1
202	PW-65	Shutter drive spring (開閉板スプリング)	1
203	PW-66	M contact spring (M接点スプリング)	1
204	MV-14	M contact (M接点)	1
205	MV-15	M contact washer (バルブワッシヤ)	1
206	MV- 7	Bulb lever (バルブ)	1
207	MVB-105	Bulb lever screw (バルブ取付)	1
208	CSVE-2	Selftimer gear assembly (セルフタイマー一式)	1
209	PW-41	Selftimer spring (セルフタイマースプリング)	1
210	CS-MV	Slow speed escapement (秒ギヤ)	1
211	MVB-137	Escapement screw 'A' (秒ギヤ取付 A)	1
212	VEB-215	Escapement screw 'C' (秒ギヤ取付 C)	1
213	MVB-148	Escapement screw 'D' (秒ギヤ取付 D)	1

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TROUBLE	CAUSE	REPAIR
WINDING		
Impossible to wind	1. Shutter set bar (41) does not move well.	Correct the bend of Shutter set bar and make it move smoothly.
	2. Shutter being inoperative, Wind stopper does not come off.	Referring to SHUTTER of SECTION I, repair the shutter.
Wind lever does not return.	1. Wind lever is bent, hitting Top cover (1) or Body (91).	Correct the bend or replace it.
Film cannot be transported.	1. Sprockets (76) race.	i. Take out Drive shaft (75) and clean it so that it may move smoothly. ii. When Rewind button does not move well, take it out and ream the hole of Bottom cover (2).
REWINDING		
Heavy in rewinding film	1. Rewind knob (5) does not move smoothly.	Taking out Rewind knob, clean Rewind shaft (10) and put glove oil on it.
SHUTTER		
Shutter cannot be set.	1. Shutter set ring (134) is bent.	Correct the bend or replace it. Note: The trouble is mainly due to the defect of shutter; as Cocking lever (169) is inoperative, winding is done forcibly, resulting in the bend, so check the shutter.
	2. Cocking lever (169) is out of place because of looseness of Cocking lever screw (168).	Adjust the connection between Cocking & drive lever (182) and Cocking lever, and tighten Cocking lever screw. Use locking paint (synthetic resin).
	3. Shutter release ring (136) does not move smoothly, so that it continues pushing Release bar (193)	Smooth the surface of Shutter release ring so that it may move smoothly, or replace it.
	4. Release arm of Mount plate (120) does not move smoothly, so that Shutter button does not return.	Adjust it to move smoothly.
	5. Release bar (193) does not return smoothly.	Clean it and make it move smoothly.
	6. Drive ring stopper (185) does not move smoothly.	Adjust the connection between Drive ring stopper and Gear base (186) so that Drive ring stopper may move smoothly.
	7. Cocking lever spring (181) is off.	Correct the figure of Cocking lever spring or replace it.
	8. Drive ring stopper (185) wears out, so that Shutter drive ring (177) cannot work.	Replace Drive ring stopper.

TROUBLE	CAUSE	REPAIR
SHUTTER		
Shutter cannot be released.	1. Mechanism of Sector gear (188), MX fly wheel (196) and MX delay action gear (197) does not work well.	Take out each gear, wash, and put glove oil on.
	2. Biting of Sector gear (188), MX fly wheel (196) and MX delay action gear (197) is not good.	Correct the bend of each axis of Gear base (186) or replace it.
	3. The sliding part of Drive ring stopper (185) and Shutter drive ring (177) does not move well.	Polish the part with oil stone and make it move smoothly. Put MOS2 grease on it.
	4. MX switch ring (164) working wrong, M contact (204) hits MX delay action gear (197), so that mechanism of MX Sector gear (188), MX fly whell (196) and MX delay action gear (197) does not work.	Correct the figure of MX switch ring spring (170) so that it may move smoothly.
	5. Selftimer gear (208) stops halfway, so that Shutter drive ring (177) does not work.	Wash Selftimer gear with mixed abluent (bezine=10 and glove oil=1) and make it move smoothly.
	6. Slow speed escapement (210) does not move well.	Wash Slow speed escapement with benzine and put one drop of glove oil on the axis with an oiler.
	7. Ankle of Slow speed escapement (210) does not bite the axis of Gear base (186).	Referring to 1 of SECTION II, adjust it.
	8. Shutter drive ring (177) does not move well.	Correct the bend of Shutter drive ring so that it may move smoothly.
	9. The pin of Shutter drive ring (177) is bent, hitting Selftimer lever.	Bend the pin at right angles.
Shutter blades do not close.	1. Slow speed escapement (210) does not work well.	Refer to 6 of "Shutter cannot be released" of SECTION I.
	2. Cocking & drive lever (182) does not slide Bulb lever (206) smoothly.	Polish the side of Cocking & drive lever with oil stone and put MOS2 grease on it.
	3. Bulb lever (206) does not slide the pin of Release bar (193).	Polish the side of Bulb lever and put MOS2 grease on it.
	4. Oil sticks to Shutter blade (176).	Take out Shutter case (165) and wash Shutter blades with benzine. Also clean the oil stuck to Mount base assembly (178), Diaphragm covering disc (174) and Shutter case (165)
Diaphragm blades do not work well.	1. The pin of Diaphragm blade (173) is off.	Take out Shutter case (165), Diaphragm covering disc (174) and Diaphragm disc (171) and replace Diaphragm blades.
	2. Oil sticks to Diaphragm blade (173).	Wash Diaphragm blades with benzine and clean the oil stuck to Shutter case (165), Diaphragm covering disc (174) and Diaphragm disc (171).

TROUBLE	CAUSE	REPAIR
	3. Set screw of Diaphragm drive ring (163) is loose.	Tighten it and put locking paint (synthetic resin).
	4. Diaphragm drive ring (163) is deformed.	Correct the bend so that it may move smoothly.
SELFTIMER		
Selftimer does not operate.	1. Selftimer gear (208) does not come off Gear base (186).	Refer to 2 of SECTION II.
	2. Selftimer gear (208) does not work well.	Same as above.
	3. Ankle holding spring of Selftimer gear (208) hits Selftimer spring (209).	Same as above.
SYNCHRONIZATION		
Flash does not fire.	1. Lead wire is off, or M contact (204) or X contact (183) does not work well.	i. Solder the lead wire. ii. Clean X,M contact with benzine. iii. If X,M contact gets corrosive, replace it.
Flash does not synchronize.	1. Contact time of X, M contact does not coincide.	Refer to 5 of SECTION II.
Flash blows out.	1. Cover of lead wire peels off and insulation becomes ineffective.	Replace the lead wire.
	2. Synchro-plug does not insulate.	Clean the plug or replace the plug and Insulation washer.
	3. X,M contact do not insulate.	When X, M contact touches the other part, refer to 5 of SECTION II, or replace Insulation washer.
METER		
Meter needle jumps.	1. Resistance inside ASA resistor assembly (148) gets dirty or its carbon strip is uneven.	i. Clean dirty spots with dry cloth. ii. If the carbon strip wears out, replace Resistance.
	2. Fixing brush 'A' (150) or Moving brush (143) is deformed, so that it does not contact ASA resistor assembly (148) well.	Adjust the figure of Fixing brush 'A' or Moving brush so that its spring tention against ASA resistor assembly may be strong enough.
	3. Brush of Shutter assembly (142) does not contact Connector ring (132) completely.	Clean the brush and let them contact each other properly.
Meter needle sticks.	1. Meter needle and Stopper (Insulator) get dirty.	Clean Meter needle and Stopper with thinner or change the position where Stopper touches.
	2. Pivot is too tight or loose.	Adjust looseness to be 0.04±0.01. Note: Tighten the pivot and the moment before Meter needle stops it should be regarded as looseness being zero and loosen the pivot at 60°. This is a proper looseness.

TROUBLE	CAUSE	REPAIR
Meter needle stops.	1. Meter needle is bent.	Correct the bend.
	2. Wire is cut inside Meter.	Take out Meter and check it by the tester; replace it if it is inoperative.
	3. Fixing brush 'A' (150) is in contact with ASA resistor assembly (148).	Correct the bend of Fixing brush 'A'.
	4. Connector ring (132) does not contact the brush of Shutter assembly (142).	Same adjustment as 3 of "Meter needle jumps" of SECTION I.
	5. The soldered part of lead wire is off.	Solder it again.
Meter is out of balance.	1. Balance of weight moves out or comes off.	Replace it.
	2. Pivot is loose.	Same adjustment as 2 of "Meter needle jumps" of SECTION I
COUNTER		
Counter does not advance.	1. The location of Advance pawl is wrong.	Refer to 6 of SECTION II.
	2. Advance pawl does not bite deep enough.	Same as above.
	3. Counter pawl (51) does not bite deep enough.	Same as above.
	4. Advance pawl does not move well.	Same as above.
Counter does not return.	1. The lever of Counter pawl (51) does not move well.	Same as above.
	2. Counter pawl (51) does not move well.	Same as above.
	3. Counter gear does not move well.	Same as above.
RANGE-FINDER		
∞ is out of focus.	1. Small mirror of Finder base (94) is off.	Clean the binding part and bind with mixed binding agent of Bond E2 and CI (7 : 3).
	2. Cam follower (92) does not move well.	Take out Cam follower and clean it so that it may move smoothly.
	3. The angle of Small mirror is wrong.	Referring to 7 of SECTION II, adjust it by collimator.
Near distance is out of focus.	1. Same as above	Refer to 8 of SECTION II.
Vertical discord of moving image	1. Same as above	Refer to 7 of SECTION II.

SECTION II : ADJUSTMENT

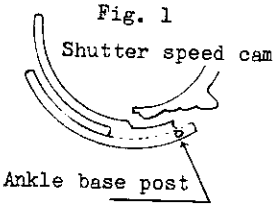
1. Adjustment of Slow speed escapement (210)

Adjustment of One second and Clutch

1-1. Adjust the pin of Shutter drive ring (177) so that it may make a right angle with Shutter drive ring.

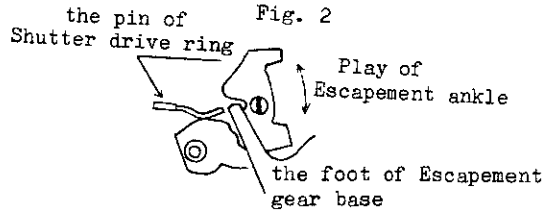
1-2. Insert Shutter speed cam (145) and check that there should be no space between Ankle base post and Shutter speed cam. (Fig. 1)

Fig. 1



1-3. Adjust the pin of Shutter drive ring and the foot of Escapement gear base so that there should be no play of Escapement ankle. (Fig. 2)

Fig. 2



1-4. Upon checking the biting of Escapement ankle adjust the speed of one second.

1-5. Check that Clutch pin does not touch Shutter speed cam at 1/125 sec.

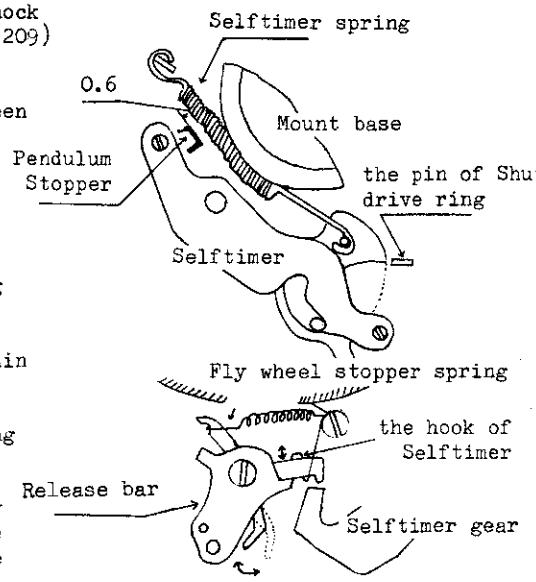
1-6. Check the movement of Slow speed escapement (210).

2. Adjustment of Selftimer gear (208)

2-1. Check that Selftimer does not start because of the shock caused by Pendulum stopper hitting Selftimer spring (209) when Selftimer lever is set.

2-2. Before Selftimer lever is set give 0.6 mm space between Pendulum stopper and Selftimer spring. (Fig. 3)

Fig. 3



2-3. Check the space between the pin of Shutter drive ring (177) and Sector gear of Selftimer (208).

2-4. Selftimer lever should be set at any given place within the operative range of 0° - 70°.

2-5. When Selftimer lever is set fully (70°), the operating time should be 7 to 11 sec.

2-6. Time when Selftimer is released is the same as MX fly wheel (196) starts or the former is released a little later. This adjustment should be made by bending the hook of Selftimer.

3. Adjustment of Shutter speed

3-1. Measure the shutter speed always with aperture being fully open.

3-2. Pay special attention to the speeds of 1/8 and 1/125 sec. if they are irregular or not.

3-3. When the speed is slow, strike Shutter speed cam (145) with punch; when the speed is fast, scrape it with file.

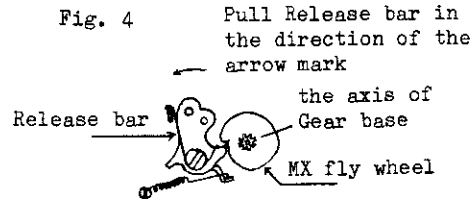
Note: Clean the metal chips and scraps of Shutter speed cam to prevent them from getting inside.

4. Adjustment of MX delay action gear (197) and MX fly wheel (196)

4-1. Put glove oil around the axis of Gear base (186).

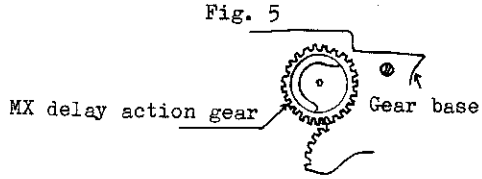
4-2. Insert MX fly wheel (196) into the axis of Gear base (186). Pull Release bar (193) and set the angle of Release bar at the cam of MX fly wheel. (Fig. 4)

Fig. 4



4-3. Insert MX delay action gear (197) into the axis of Gear base (186). Fix so that the cut part of MX delay action gear may be on the straight line with the angle of Gear base. (Fig. 5)

Fig. 5



4-4. Check the operation of MX fly wheel (196) and MX delay action gear (197).

4-4-1. When Cocking lever (169) is set, the extended line of the cut part of MX delay action gear should coincide with the center line of teeth of Sector gear (188). (Fig. 6)

the position of the cut part of MX delay action gear when Cocking lever is set

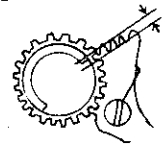
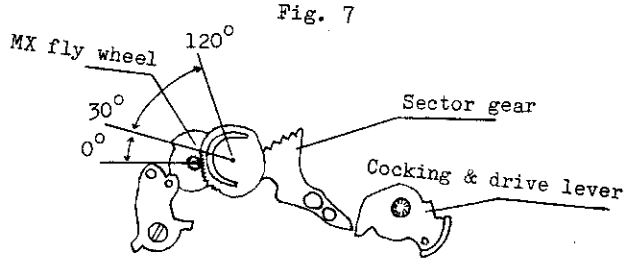


Fig. 6

4-4-2. Actuate Cocking lever slowly and the moment that Sector gear (188) comes off Cocking & drive gear (182), the position of cam of MX fly wheel (196) should be 30° - 120° against Fly wheel stopper (192). (Fig. 7)

Fig. 7

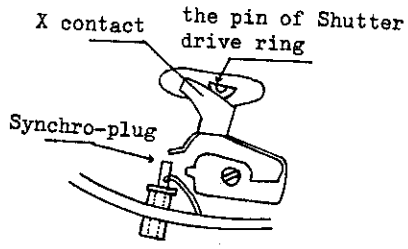


5. Adjustment of Synchronization

5-1. Adjustment of X contact

5-1-1. Adjust the figure of X contact so that X contact may not come off the pin of Shutter drive ring (177). (Fig. 8)

Fig. 8



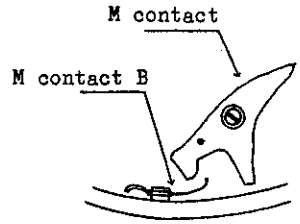
5-1-2. The moment before Shutter blade (176) is going to be fully open, the plug should contact X contact.

5-1-3. Check the insulation of M contact, Synchro-plug, and Lead wire.

5-2. Adjustment of M contact

Fig. 9

5-2-1. Bend M contact B toward M contact for better contact officiency. (Fig. 9)



5-2-2. Check that M contact does not touch M contact B when the shutter is set with MX switch ring (164) set at M.

5-2-3. Check the insulation of M contact, Synchro-plug, and Lead wire.

5-2-4. Adjust time lag of synchro contact.

5-2-4-1. Proper time lag is 13.0 to 16.0 ms.

5-2-4-2. When time lag is fast, bring M contact B near M contact.

5-2-4-3. When time lag is slow, keep M contact B away from M contact.

6. Adjustment of Counter

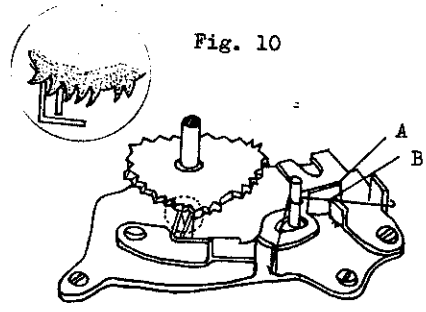
6-1. Counter pawl lever, Advance pawl and Counter pawl should move smoothly.

6-2. Open Back cover and check that Counter gear moves smoothly.

6-3. When Back cover is closed, there should be a space between Advance lever A and Counter pawl lever B.

6-4. Return Counter gear to 0 and when Back cover is closed, the tip of Counter pawl (51) should get in the fourth tooth of Counter gear (there should be 0.1 mm space between the tip of the tooth) and Advance pawl should be positioned between the third and the fourth tooth. (Fig. 10)

Fig. 10



6-5. Wind Wind lever fractionally and check that the gear is advanced further 1/3 to 1/2 after Counter pawl gets in the next tooth.

7. Adjustment of Range-finder

7-1. Adjustment of out-of-focus image

Set Focusing scale (125) at ∞ and view the chart in collimator or a subject more than 200 M (660ft.) away. If the subject (chart) is seen double as shown in Fig. 11, bend the front mirror frame till the images become one. (Fig. 12)

Fig. 11

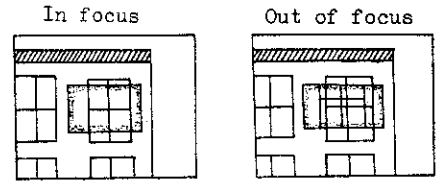
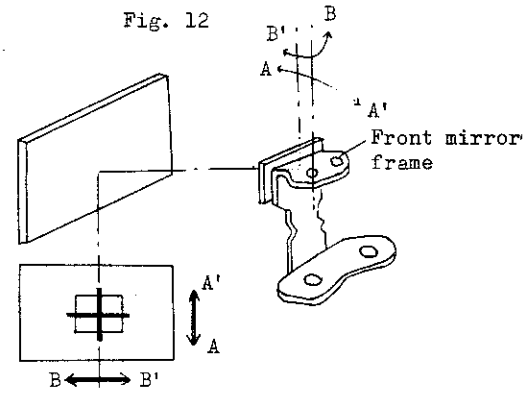


Fig. 12



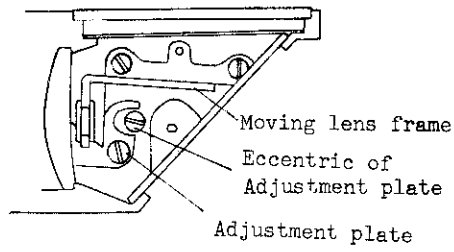
7-2. Adjustment of focus at near distance

Set Focusing scale (125) at ∞ , place a focusing glass on the film plane of Body (91), loosen Helical stopper screws and adjust till a clear image is obtained. Next, focus a subject about 3 meters (10 ft) away, in that condition view the subject on the film plane and the image should be clear then.

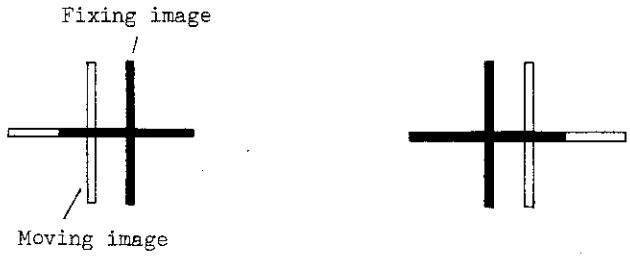
8. Adjustment of Focus at near distance

8-1. Set Focusing scale (125) at ∞ and using a collimator or aiming at a subject more than 660 ft. (200 meters) away place Focusing glass (with a tape of 0.05 mm thick) on the film plane of Body. Loosen Cup screw (127), move the position of Focus ring and adjust it until the image may become clear.

8-2. Set the moving image at a chart or a subject 8 ft. (about 24 meters) away, in that condition view the subject on the film plane. If the image is not clear, loosen the screw of Adjustment plate as illustrated and adjust it by turning Eccentric of Adjustment plate.



8-3. Put a focusing glass on the film plane, turn Focus ring from to near distance, look through the viewfinder and focus at the position where the clear image can be seen. If the moving image can be seen at the left side of the fixing image, turn Eccentric right and if it can be seen at the right side, turn Eccentric left.



Turn Eccentric right

Turn Eccentric left

9. Adjustment of LV

9-1. Make sure of the following items before measurement.

a. Make sure of the voltage which determines brightness.

b. Make sure whether or not the meter source (Mercury battery 1.32 V) is drained.

c. Make sure whether or not the diffusing glass is dirty.

d. Make sure whether or not the brightness of the light box is correct.

9-2. Measure it by putting Lens frame inside the brightness frame of the light box.

9-3. Adjust it according to the slided position of volume resistance in the bottom part of Body.

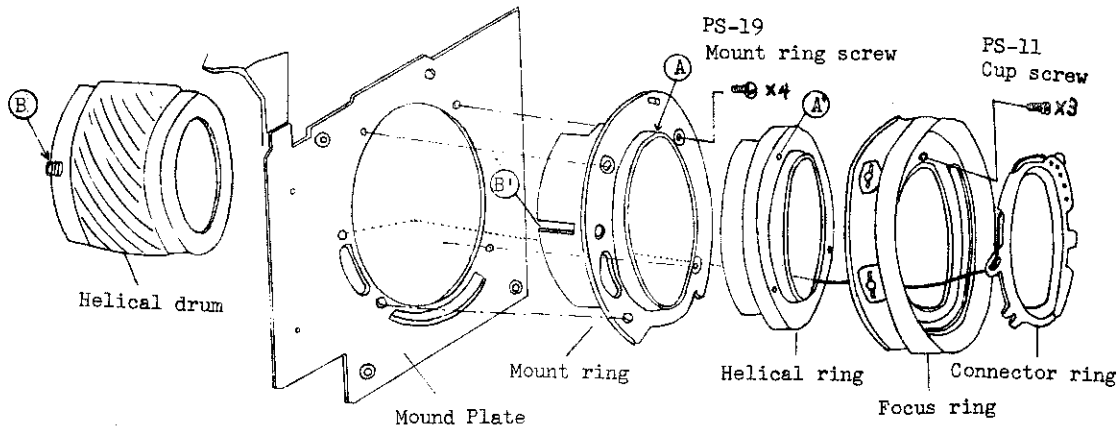
Note: Old Petri cameras have resistance in the meter case of the upper part of Body.
(Fixed resistance may be replaced with volume resistance.)

9-4. Set Shutter speed of each LV, turn Diaphragm ring from the side of the opening to the closing, read Diaphragm when the meter needle is situated at the center of index in the viewfinder and it must be within ± 2/3 aperture of the following table.

LV	7	10	15
SPEED	8	30	500
F	4	5.6	8
ASA	100	100	100

10. Overhaul of Helicoid

10-1. Remove Focus ring, Helical ring, Helical drum and Mount ring, and wash them with abluent.



10-2. Put grease on Helicoid. After assembling Helicoid make sure that the grease does not flow out of the screws.

10-3. Fix Mount ring to Mount plate.

10-4. Screw Helical drum in Mount ring. (Counterclockwise screws)

10-5. From the position where Helical drum is screwed in to the utmost return to the position (A) the screw hole (A') of Helical ring which is nearest to the center (A) of Mount ring.

10-6. Screw Helical drum in Helical ring from the inside of Mount plate. At this time search for such a screw position of Helical drum as the pin (B) of Helical drum may come to the nearest position from the groove (B') of Mount ring, and screw B in B' while rotating Helical ring in the state of 5.

SECTION III : FINAL INSPECTION

Repairs and assembly being finished, the final inspection follows.
Such a strict inspection as done in the manufacturing process is not necessary.
Hereunder are the points necessary for the final inspection.

1. Wind Lever

   Wind lever must operate from start to finish, smoothly without feeling rough, stuck or sticky. When Wind lever is returned slowly, it should return to the original position prior to winding.

2. Film Counter

   Open Back cover to return Film counter to 0, looking at Film counter wind Wind lever and check if the graduation of Counter dial advances one by one. Next, check if the graduation regularly advances regardless of whether Wind lever is returned slowly or rapidly. When the graduation advances regularly to a finish, open Back cover slowly to see if Film counter returns to S completely.

3. Shutter Button

   Shutter button should operate smoothly when it is being pressed down and should come back up smoothly when it is let go.

4. Rewind knob should rotate smoothly without getting stuck.

5. When Rewind button is pressed, Sprockets should rotate smoothly.

6. Rotate Film spool with finger-tip to check that there is appropriate weight and no uneveness.

7. Rotate Helicoid to check that there is no roughness and uneveness.

8. Rotate Diaphragm ring to check that there is no roughness and uneveness and Diaphragm blades move properly.

9. Rotate Shutter speed cam to check if it click-stops correctly.

10. Shutter Speed

    Measure the exposure time at 1/500, 1/15, and 1/1 sec.
    Set Selftimer lever and release the shutter to check if it is coupled correctly.

11. Synchro Contact

    Check the induction of X and M synchronization.

12. Meter Needle

    Rotate Shutter speed cam and Diaphragm ring to check the movement of Meter needle.
    Next, measure LV in accordance with the following chart:-

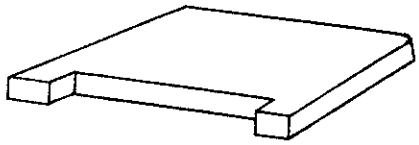
LV	9	12	15
Shutter	15	30	500
f	2.8	11	11
ASA	25	100	200

13. Focus and Finder

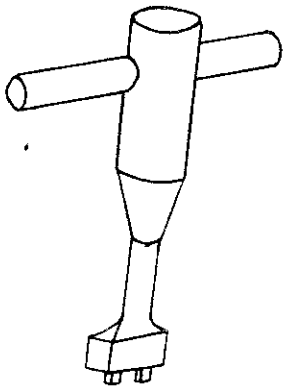
    Check focus by means of collimator or by aiming at a subject over 200 meters (660 ft.) away.
    Check that there is no dirt or dust in the view-finder.

14. Check winding and rewinding with film loaded.

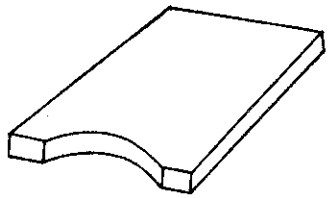
ATTACHMENT: TABLE OF PARTICULAR TOOLS



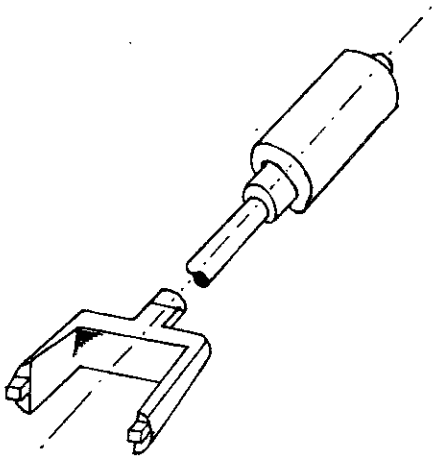
Front) ' retainer(159)driver



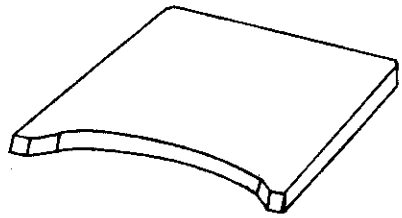
Focus Adjuster



Front ring retainer(162)driver



Jam nut(122)driver



Rear lens ring(139)driver